Partnership Opportunity Document (POD)

with

NASA Goddard Space Flight Center (GSFC)

for

Avionics for an Astrophysics Explorer Mission of Opportunity

August 2014

General Information

Procurement supplied

Contracting Office Address

NASA/Goddard Space Flight Center, Code 210.S, Greenbelt, MD 20771

1.0 Introduction and Scope

This proposal opportunity is for a NASA Second Stand Alone Missions of Opportunity Notice (SALMON-2) for a 2014 Astrophysics Explorer Mission of Opportunity (MoO). The draft Program Element Appendix (PEA) was released July 14, 2014. NASA GSFC is seeking a partner to provide a Main Electronic Box (MEB) to be used with a telescope for a potential proposal. The potential GSFC MoO instrument is designed to meet the science goals of the Explorer Program, as currently understood.

GSFC instrument teams will be submitting proposals to this Astrophysics Explorers PEA. This is a two-step process with initial proposals due 90 days after release of the final PEA. Information on the release of the PEA can be found at: http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={F14AC3B1-F0DF-89F5-2625-8341199C12B5}&path=open.

The following key dates are from the draft PEA:

Final PEA release	Late Summer/Early Fall 2014
Pre-proposal Conference	~3 weeks after AO release
Proposals due	90 days after final PEA release
Competitive Phase A Selection	Summer 2015
Concept Study Reports Due	Summer 2016
Final Selection	Early 2017

This partnership opportunity is being issued to select a teaming partner to help prepare the GSFC Explorer candidate MoO instrument concept for the proposal submittal. The major flight system GSFC is interested in finding partners for is an MEB.

There will be no exchange of funds between the teaming partners for the portion of this partnership opportunity dealing with the preparation of the initial proposal submission to the Explorer PEA. Full funding will be available for subsequent phases should the MoO instrument/mission be competitively selected for those additional phases. Additionally, release of this POD does not commit GSFC to enter into a partnership.

2.0 System Overview

Desired spaceflight system - GSFC is interested in finding a partner to provide a spaceflight-qualified MEB. No other subsystems of the MoO are part of this POD.

Detailed information on the MEB specifications for this potential Explorer MoO will be provided to those responding with a Notice of Interest. A Notice of Interest (it is intentionally not called a notice of intent) does not obligate an organization to provide a POD response.

3.0 Pre-selection Support

SOW: It is expected that the selected respondent will provide support using their own resources to help develop and write the mission proposal in response to the PEA in the area of the MEB and mission implementation. This will involve meeting with the scientists and the overall mission engineering team: to (a) help define the end-to-end performance and interface requirements; (b) identify study topics; and (c) predict performance. This will include cost estimation for all mission phases. The period of performance for this interval is expected to last from POD selection date until proposal submission (Late 2014). If the proposal is selected to submit a Phase A Concept Study Report (CSR), the pre-selection support will continue through CSR submission (Summer 2016).

POD Response Instructions for Pre-Selection Support

The respondent shall:

1) Demonstrate experience in the design, fabrication, integration and testing of the MEB under consideration:
   - Identify the means of addressing system requirements your team assumes are likely to exist and tasks the system is intended for,
   - Highlight critical or challenging areas of the design,
   - Provide a technical summary/description of the proposed hardware including relevant heritage and cost of similar systems.

2) Identify potential studies related to the MEB.

3) Discuss cost savings that can be realized utilizing the proposed system.

4) Indicate the level of resources to be allocated for the proposal phase.
   - Discuss skills that will be provided, the appropriate level of conceptual design, and important analyses and trade studies that will be provided.

5) Identify previous mission proposal support in the area of spaceflight avionics design, fabrication, integration and testing:
   - Provide data on scope of the avionics subsystem, role in the proposal process, and proposal section responsibility. Provide a customer reference POC.
   - Describe how this proposal role mapped to their role in the end instrument development. If the scope changed, explain why.

4.0 Development Support

SOW: If the mission is selected for development and launch, the respondent will be responsible for the design, development, and test of the MEB and for launch and early orbit check out leading to full scientific operation. The respondent is responsible for identifying the MEB requirements and providing all aspects of the MEB (either directly, or through purchasing or teaming arrangements). The period of performance for this interval is expected to last approximately 36 months, starting in early 2017. This duration and start date may change depending upon selection timelines and budget allocations.

POD Response Instructions for Development Support

The respondent shall:

1) Identify missions successfully supported in this capacity and provide a customer reference POC.
    - Provide information on similar avionic systems designed and delivered, and describe how that experience is applicable to this mission. This shall include basic information on scope of work, how well the fielded avionics system met the cost and technical requirements, and how well the system met the proposed schedules.
2) Provide a Rough Order of Magnitude (ROM) cost estimate and timeline for the scope of the design, fabrication, and testing of the MEB. Neither cost nor timeline ROM will be considered a binding commitment, but will serve as a consideration during the partnership evaluation. In consideration of the rigid cost cap for Explorer missions, the cost range for the MEB will be an important consideration. The respondent is invited to comment on the reasonableness of the ROM cost estimate.
3) List methods for keeping cost and the risk of cost growth low, including how to utilize existing spaceflight qualified hardware to minimize costs and provide a robust system.
4) Identify available design and modeling capabilities required to support development of the MEB. Describe the level of experience with similar MEBs for relevant personnel.
5) Identify fabrication and testing facilities that will be required to support development and test of the MEB.

5.0 Additional Information

For pre-selection or development support, the respondent may provide additional information on other pertinent missions for which they and any partners/vendors, have provided avionics systems, and identify the relevant details of these similar systems. The respondent may also identify any other ideas and related activities, which your organization is or has been involved with, and the significance of that activity to this mission.

6.0 General Instructions for POD Response

Potential respondents are asked to contact the GSFC Explorer team with a **Notice Of Interest** (intentionally not called a notice of intent). This Notice of Interest does not create an obligation to respond to the POD, but allows the GSFC Explorer team to disseminate additional details to provide answers to questions from potential partners. **Notice of Interest respondents will receive a document containing additional details on the MEB specifications, which can be used to facilitate a focused response to the partnership opportunity.** These details are competition sensitive and are not to be shared outside the teams necessary to prepare a full response.

After receipt of the mission document, respondents may send questions to the GSFC point of contact (POC) listed below. All questions and answers will be made available to all those who respond to the Notice of Interest. The source of the questions shall be held confidential. Questions and answers that contain information unique to a respondent's proprietary approach will not be shared if they are identified as such.

Notice of Interest shall be sent to the POC listed below via email with 'Notice of Interest' in the subject line, a simple sentence or two expressing interest and an email address to send further information.

For purposes of this partnership opportunity, the GSFC POC is Mike Adams, michael.l.adams@nasa.gov, 301-286-2010.

Responses to the POD shall:

1) Be in a PowerPoint presentation format or word document format that shall not exceed 30 pages. The font size for the text shall be no smaller than 12 point.
2) Be as specific as possible about the MEB system.
3) Address all requirements noted in sections 3.0 through 7.0 of this document.

Responses will be treated as proprietary information and controlled as such.

Final presentation packages must be received via email **by 5 PM (EDT) on September 5th, 2014**. Please provide the presentation to the POC listed above.

Highly ranked proposers may be asked to participate in an informational telecon with the GSFC instrument team. The telecon would be for clarification of proposal information and may be held prior to award, if deemed necessary by the Government. The telecons would be between the GSFC instrument team and each proposer individually.

7.0 Selection Criteria for Awarding Partnership Opportunity

Selection criteria will be consistent with the desire to encourage cost effective partnerships between the Government and Industry. The information requested in Section 7.0 will allow the evaluators to determine how appropriate the respondent's MEB is to this Explorer mission.

Selection Criteria

Proposal/Pre-selection Support (30 points)

- Demonstrate experience in the design, fabrication, integration and testing of the MEB under consideration.
- Identify potential trade studies related to the MEB.
- Cost savings realized utilizing the proposed system.
- Level of resources to be allocated for the proposal phase.
- Previous mission proposal support in the area of spaceflight avionics design, fabrication, integration and testing.

Development Support (70 points)

- Reasonableness of cost and schedule estimates with supporting information from similar previous missions
- Experience and past performance in development phases.
- Experience and past performance with respect to similar space flight avionics systems. Experience developing and implementing similar space flight avionics systems is a minimum requirement.
- Methods for keeping cost and the risk of cost growth low.
- Completeness of identification of functions by mission phase.
- Reasonableness of design and modeling capabilities to support the effort.
- Reasonableness of fabrication and testing facilities to support the effort.
- Mass of the MEB.
- Power and thermal control for the MEB.
- Ability to survive and operate in the target environment.

8.0 Acronyms List

CSR	Concept Study Report
EDT	Eastern Daylight Savings Time
GSFC	Goddard Space Flight Center
MEB	Main Electronics Box
MoO	Mission of Opportunity
PEA	Program Element Document
POC	Point of Contact
POD	Partnership Opportunity Document
ROM	Rough Order of Magnitude
SALMON-2	Second Stand Alone Missions Of Opportunity Notice
SOW	Statement Of Work